STATE OF NEW HAMPSHIRE
INTER-DEPARTMENT COMMUNICATION

DATE: October 18, 2018

FROM: Sarah Large
Wetlands Program Analyst

AT (OFFICE): Department of Transportation
Bureau of Environment

SUBJECT Dredge & Fill Application
Barrington, 41660

TO Gino Infascelli, Public Works Permitting Officer
New Hampshire Wetlands Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

Forwarded herewith is the application package prepared by NH DOT Bureau of Bridge Maintenance for the subject major impact project. This project is classified as major per Env-Wt 303.02(p). The project is located on US Route 202 in the Town of Barrington, NH. The proposed work consists of the rehabilitation of a 10' x 6' metal pipe arch by installing a concrete invert lining and cutoff walls. Riprap will be placed at the inlet and outlet for channel and bank stabilization. A downstream fish weir will be installed to establish backwater through the pipe during low flow periods.

This project was reviewed at the Natural Resource Agency Coordination Meeting on October 18, 2017. A copy of the minutes has been included with this application package. A copy of this application and plans can be accessed on the Departments website via the following link: http://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/wetland-applications.htm

Mitigation is not required. Please see the Natural Resource Agency Meeting minutes and mitigation narrative included with the application.

The lead people to contact for this project are Steve Johnson, Assistant Administrator, Bureau of Bridge Maintenance (271-3668 or steve.johnson@dot.nh.gov) or Sarah Large, Wetlands Program Analyst, Bureau of Environment (271-3226 or sarah.large@dot.nh.gov).

A payment voucher has been processed for this application (Voucher #545640) in the amount of $388.60.

If and when this application meets with the approval of the Bureau, please send the permit directly to Sarah Large, Wetlands Program Analyst, Bureau of Environment.

SEL:sel
Enclosures
cc:
BOE Original
Town of Barrington (4 copies via certified mail)
David Trubey, NH Division of Historic Resources (Cultural Review Within)
Carol Henderson, NH Fish & Game (via electronic notification)
Maria Tur, US Fish & Wildlife (via electronic notification)
Mark Kern, US Environmental Protection Agency (via electronic notification)
Michael Hicks, US Army Corp of Engineers (via electronic notification)
Kevin Nyhan, BOE (via electronic notification)
Isinglass River Local Advisory Committee (via certified mail)

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NHDES-W-06-012

WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau
Land Resources Management

Check the status of your application: www.des.nh.gov/onestop

RSA/Rule: RSA 482-A/ Env-Wt 100-900

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.
			Check No.
			Amount:
			Initials:

1. REVIEW TIME: Indicate your Review Time below. To determine review time, refer to Guidance Document A for instructions.

☐ Standard Review (Minimum, Minor or Major Impact) ☐ Expedited Review (Minimum Impact only)

2. MITIGATION REQUIREMENT:

If mitigation is required a Mitigation-Pre Application meeting must occur prior to submitting this Wetlands Permit Application. To determine if Mitigation is Required, please refer to the Determine if Mitigation is Required Frequently Asked Question.

Mitigation Pre-Application Meeting Date: Month: 10 Day: 18 Year: 2017

☒ N/A - Mitigation is not required

3. PROJECT LOCATION:

Separate wetland permit applications must be submitted for each municipality that wetland impacts occur within.

ADDRESS: **US 202**			TOWN/CITY: **Barrington**
TAX MAP:	BLOCK:	LOT:	UNIT:
USGS TOPO MAP WATERBODY NAME: **unnamed stream** ☐ NA		STREAM WATERSHED SIZE: **3.16 sq. mi.** ☐ NA	
LOCATION COORDINATES (If known): **43`14'39.3", 71`3'13.1"** ☒ Latitude/Longitude			

4. PROJECT DESCRIPTION:

Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.

Rehabilitate the 10'-8 x 6'-11 metal plate pipe arch carrying US 202 over an unnamed stream that flows from the outlet of Ayers Pond. The proposed project will include installing a concrete invert & cut off walls within the existing structure. Other proposed work includes placing riprap at the outlet channel and banks, and constructing a downstream fish weir.

5. SHORELINE FRONTAGE:

☒ NA This does not have shoreline frontage. SHORELINE FRONTAGE:

Shoreline frontage is calculated by determining the average of the distances of the actual natural navigable shoreline frontage and a straight line drawn between the property lines, both of which are measured at the normal high water line.

6. RELATED NHDES LAND RESOURCES MANAGEMENT PERMIT APPLICATIONS ASSOCIATED WITH THIS PROJECT:

Please indicate if any of the following permit applications are required and, if required, the status of the application.

To determine if other Land Resources Management Permits are required, refer to the Land Resources Management Web Page.

Permit Type	Permit Required	File Number	Permit Application Status
Alteration of Terrain Permit Per RSA 485-A:17	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Individual Sewerage Disposal per RSA 485-A:2	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Subdivision Approval Per RSA 485-A	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Shoreland Permit Per RSA 483-B	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED

7. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS:

See the Instructions & Required Attachments document for instructions to complete a & b below.

a. Natural Heritage Bureau File ID: NHB 18 - 3161 .

b. ☒ Designated River the project is in ¼ miles of: **Isinglass River** ; and date a copy of the application was sent to the Local River Management Advisory Committee: Month: __ Day: __ Year: ____

☐ N/A

8. APPLICANT INFORMATION (Desired permit holder)

LAST NAME, FIRST NAME, M.I.: **Johnson, Steve, W**

TRUST / COMPANY NAME: **NHDOT-Bridge Maintenance** | MAILING ADDRESS: **PO Box 483**

TOWN/CITY: **Concord** | STATE: **NH** | ZIP CODE: **03302**

EMAIL or FAX: **Steve.Johnson@dot.nh.gov** | PHONE: **271-3667**

ELECTRONIC COMMUNICATION: By initialing here: **SWJ**, I hereby authorize NHDES to communicate all matters relative to this application electronically

9. PROPERTY OWNER INFORMATION (If different than applicant)

LAST NAME, FIRST NAME, M.I.: **NH Dept. of Transportation**

TRUST / COMPANY NAME: **NH Dept. of Transportation** | MAILING ADDRESS: **PO BOX 483**

TOWN/CITY: **Concord** | STATE: **NH** | ZIP CODE: **03302**

EMAIL or FAX: **Sarah.Large@dot.nh.gov** | PHONE: **271-3226**

ELECTRONIC COMMUNICATION: By initialing here **SEL**, I hereby authorize NHDES to communicate all matters relative to this application electronically

10. AUTHORIZED AGENT INFORMATION

LAST NAME, FIRST NAME, M.I.: | COMPANY NAME:

MAILING ADDRESS:

TOWN/CITY: | STATE: | ZIP CODE:

EMAIL or FAX: | PHONE:

ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically

11. PROPERTY OWNER SIGNATURE:

See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to identify the presence of historical/ archeological resources while coordinating with the lead federal agency for NHPA 106 compliance.
8. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project.
9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
12. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not forward returned mail.

Property Owner Signature	**Steve W. Johnson** Print name legibly	10/18/2018 Date

MUNICIPAL SIGNATURES

12. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

1. Waives its right to intervene per RSA 482-A:11;
2. Believes that the application and submitted plans accurately represent the proposed project; and
3. Has no objection to permitting the proposed work.

⇨	Print name legibly	Date

DIRECTIONS FOR CONSERVATION COMMISSION

1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
2. Expedited review requires the Conservation Commission signature be obtained **prior** to the submittal of the original application to the Town/City Clerk for signature.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will reviewed in the standard review time frame.

13. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

⇨ Town/City Clerk Signature	Print name legibly	Town/City	Date

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,I

1. For applications where "Expedited Review" is checked on page 1, if the Conservation Commission signature is not present, NHDES will accept the permit application, but it will NOT receive the expedited review time.
2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the single, original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

14. IMPACT AREA:

For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact

Permanent: impacts that will remain after the project is complete.

Temporary: impacts not intended to remain (and will be restored to pre-construction conditions) after the project is complete.

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.		TEMPORARY Sq. Ft. / Lin. Ft.	
Forested wetland	91	☐ ATF	118	☐ ATF
Scrub-shrub wetland		☐ ATF		☐ ATF
Emergent wetland		☐ ATF		☐ ATF
Wet meadow		☐ ATF		☐ ATF
Intermittent stream		☐ ATF		☐ ATF
Perennial Stream / River	1130 / 106	☐ ATF	278 / 33	☐ ATF
Lake / Pond	/	☐ ATF	/	☐ ATF
Bank - Intermittent stream	/	☐ ATF	/	☐ ATF
Bank - Perennial stream / River	245 / 70	☐ ATF	81 / 39	☐ ATF
Bank - Lake / Pond	/	☐ ATF	/	☐ ATF
Tidal water	/	☐ ATF	/	☐ ATF
Salt marsh		☐ ATF		☐ ATF
Sand dune		☐ ATF		☐ ATF
Prime wetland		☐ ATF		☐ ATF
Prime wetland buffer		☐ ATF		☐ ATF
Undeveloped Tidal Buffer Zone (TBZ)		☐ ATF		☐ ATF
Previously-developed upland in TBZ		☐ ATF		☐ ATF
Docking - Lake / Pond		☐ ATF		☐ ATF
Docking - River		☐ ATF		☐ ATF
Docking - Tidal Water		☐ ATF		☐ ATF
TOTAL	1466 / 176		477 / 72	

15. APPLICATION FEE: See the Instructions & Required Attachments document for further instruction

☐ Minimum Impact Fee: Flat fee of $ 200

☒ Minor or Major Impact Fee: Calculate using the below table below

Permanent and Temporary (non-docking) **1943** sq. ft. X $0.20 = **$ 388.60**

Temporary (seasonal) docking structure: _____ sq. ft. X $1.00 = $ _____

Permanent docking structure: _____ sq. ft. X $2.00 = $ _____

Projects proposing shoreline structures (including docks) add $200 = $ _____

Total = **$ 388.60**

The Application Fee is the above calculated Total or $200, whichever is greater = **$ 388.60**

N

0 0.15 0.3 0.6 0.9 1.2 Miles

1:24,000

WETLANDS PERMIT APPLICATION – ATTACHMENT A
MINOR AND MAJOR - 20 QUESTIONS

Land Resources Management
Wetlands Bureau

Check the Status of your application: www.des.nh.gov/onestop

RSA/ Rule: RSA 482-A, Env-Wt 100-900

Env-Wt 302.04 Requirements for Application Evaluation - For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Respond with statements demonstrating:

1. The need for the proposed impact.

The existing metal arch pipe carrying US 202 over the unnamed stream that flows from the outlet for Ayers Pond has reached the end of its design life. The current condition of the pipe is rusted and developing holes. It is necessary to impact jurisdictional areas to provide for the repairs. The impacts are for the temporary construction areas, the concrete invert within the pipe, cut off walls, and riprap at the outlet and inlet to stabilize the channel and banks near the structure. If the structure is not rehabilitated, it will eventually be load posted or closed.

2. That the alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site.

The alternatives considered are as follows:

Replace the bridge with a new structure in compliance with the NH Stream Crossing Guidelines: According to the NH Stream Crossing Guidelines and using the geometric curve calculation, if a new structure were to be constructed at this location it would require a span of 28'-0. A structure of this size would cost approximately $650,000. Spending this much money on a structure that could be adequately preserved for approximately $120,000 would not be a practicable use of resources.

Install Concrete Invert: This is the proposed preferred alternative because it is the most cost effective way to repair a rusted metal pipe bridge. The additional impacts associated with this method are minimal. The project as proposed has an estimated cost of $120,000. This is the most cost-effective solution and wetland impacts are minimized to the maximum extent practicable.

In the October 18, 2017 Natural Resource Agency Coordination Meeting no concerns with this project were raised.

3. The type and classification of the wetlands involved.

R2UB12-Riverine, lower perennial, unconsolidated bottom, cobble gravel and sand

PFO1E-Palustrine, forested, broad-leaved deciduous, seasonally flooded/ saturated

Bank-Bank

4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.

The unnamed stream that flows from the Outlet of Ayers Pond into the Isinglass River approximately 0.3 miles downstream of the crossing.

5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.

The unnamed stream that flows from the outlet of Ayers Pond has not been identified as a rare surface water of the state.

6. The surface area of the wetlands that will be impacted.

1408 sq. ft. Riverine (1130 sq. ft. permanent, 278 sq. ft. temporary)

209 sq. ft. Palustrine (91 sq. ft. permanent, 118 sq. ft. temporary)

326 sq. ft. Bank (245 sq. ft. permanent, 81 sq. ft. temporary)

7. The impact on plants, fish and wildlife including, but not limited to:
   a. Rare, special concern species;
   b. State and federally listed threatened and endangered species;
   c. Species at the extremities of their ranges;
   d. Migratory fish and wildlife;
   e. Exemplary natural communities identified by the DRED-NHB; and
   f. Vernal pools.

a) The Natural Heritage Bureau identified several special concern species close to the project limits. After the NHFG Nongame and Endangered Wildlife Program reviewed the NHB report it was determined that as long as connectivity through the pipe was satisfied using a fish weir, the proposed project would not have any negative effects on those species. See included email.

b) The US Fish and Wildlife Services (USFW) IPaC tool identified the Northern Long-eared Bat (NLEB), a federally listed threatened species, that may be interested species that may be present within the bounds of the project area. A streamlined 4(d) Rule consultation form has been submitted to the USFWS New England Field Office to notify the USFWS of the project and describe the activities that are accepted from incidental take prohibitions. The streamlined 4 (d) Rule consutlation form indicated that the project adheres to the conditions of the NLEB 4(d) Rule and the project's Section 7 consultation requirements are satisfied by submission of the form in accordance with the January 5, 2016, Programmatic Biological Opinion (BO) on the final 4(d) tule for the NLEB. The project would not result in any prohibited take of NLEB. It was determined that the project area is not suitable for Small Whorled Pagonia, and it will not be a concern for this project. See included email from Amy Lamb NH NHB.

c) There are no species known to be at the extremities of their ranges located in the project area.

d) Migratory fish and wildlife will not be affected by this project.

e) The Department has coordinated with DRED and results of the NHB review revealed there are records but they will not be expected to be impacted.

f) There were no vernal pools identified and/or delineated in the project area.

8. The impact of the proposed project on public commerce, navigation and recreation.

During construction all lanes of traffic will be maintained at all times. The existing structure is non-conducive to boaters. There are no recreational areas that have been identified in this area. When construction is completed, the project as proposed will be a benefit to the public commerce by providing a safer, longer lasting structure and roadway.

9. The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake.

The project will not significantly interfere with the aesthetic interests of the general public. The proposed improvements will be more pleasing to the eye than the structure in poor condition or will go unnoticed.

10. The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.

The project will not interfere with or obstruct public rights of passage or access. During construction, traffic will be maintained at all times.

11. The impact upon abutting owners pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to rip-rap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.

The project as proposed will not alter the chance of flooding on abutting properties. The repaired crossing will continue to pass the Q100 after the invert lining and the riprap erosion protection are added. The rehabilitated structure will better serve the abutting properties if they need to travel the road.

12. The benefit of a project to the health, safety, and well being of the general public.

The project will provide a safer, longer lasting structure and roadway. If the structure is not rehabilitated, the bridge will eventually be load posted or closed. Keeping the roadway open benefits commerce, trade, emergency access, etc., for the general public.

13. The impact of a proposed project on quantity or quality of surface and groundwater. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and the difference in the quality of water entering and exiting the site.

The surface water currently runs off the road, and over natural vegetation along the banks of the river and road embankements. Upon completion of the project, surface water will drain in the same manner. The project will have no adverse effects on the quality or quantity of surface and ground water. No additional impervious surface will be added. Best Management Practices will be used to prevent any adverse effect to water quality during construction.

14. The potential of a proposed project to cause or increase flooding, erosion, or sedimentation.

Flooding: Placing a concrete invert and riprap at the outlet will not have any effect on the structure's ability to pass the 100 year storm event. The decrease in hydraulic capacity through the structure due to the invert is negligible. This bridge is outside of any mapped flood zones by FEMA. (see 904.06 form)

Erosion: A cutoff wall will be installed to prevent erosion and undermining at the outlet of the pipe. Placing a concrete invert will not increase erosion. Riprap channel and bank stabilization will be placed at the outlet to prevent any erosion.

Sedimentation: Nothing will be placed that would be a barrier to sediment transport.

15. The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards.

Surface water will not be reflected or redirected as a result of this project. The unnamed stream that flows from the outlet of Ayers Pond does not have enough water for wave energy to be an issue.

16. The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alterations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage of ownership of that wetland and the percentage of that ownership that would be impacted.

The work consists of the repair of an existing bridge structure. There are no similar structures in the vicinity owned by other parties that would require repair like this.

17. The impact of the proposed project on the values and functions of the total wetland or wetland complex.

This project has minimized overall impacts and will not impact the values and function of Outlet for Ayers Pond. The unnamed stream carries flow from Ayers Pond to the Isinglass River (at low elevation) and serves as wildlife habitat for many aquatic and terrestrial species. The adjacent palustrine forested wetland at the outlet of the crossing serves as wildlife habitat as well as floodflow storage, nutrient removal/retention/transformation, and shoreline stabilization to the stream. Both the unnamed stream and PFO1E wetland will continue to serve these functions and values after the work is completed.

18. The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.

The project is not located in or near any Natural Landmarks listed on the National Register.

19. The impact upon the value of areas named in acts of Congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.

The proposed project will not impact any of areas named in acts of Congress or presidential proclamations.

20. The degree to which a project redirects water from one watershed to another.

The project as proposed will not redirect water from one watershed to another.

Additional comments

NOTES ON CONFERENCE:

Postpone Finalization September 20th, 2017 Meeting Minutes
Matt Urban asked the group if it would be ok to postpone the finalization of the September 20th, 2017 meeting minutes as the draft minutes had only been out for a week. The group agreed to postpone the finalization of minutes to November.

Barrington, #41660 (Non-Federal)
The purpose of this project is to place a concrete invert with cutoff walls in the bottom of the existing metal arch pipe.

Doug Locker provided an overview of the project which is a 10'-8 plate pipe arch spanning over Ayers Pond Outlet carrying US202. The drainage basin for Ayers Pond Outlet is 3.16 square miles. The existing structure was originally built in 1978. There were several NHB records in the area of the project site. This project will provide a fish weir at the downstream side which will help maintain connectivity through the pipe.

Slides were shown giving the location of the pipe, the upstream and downstream channels, as well as the inlet and outlet of the pipe. A map was also provided showing the proposed impacts of the project which included rip rap at the downstream end of the pipe and the upstream banks and temporary impacts provided for the cofferdam and stream diversion.

Carol Henderson mentioned that Kim Tuttle had stated that it was a high priority for Blandings Turtles, and it was very important to maintain connectivity which the fish weir would adequately provide.

Mike Hicks asked that, if no trees were to be cut? Doug Locker stated that there would not be any cutting of trees.

Lori Sommer asked what material would be used to create the fish weir. Tim Boodey stated that we would be using stone and mortar to mold the weir. Tim Boodey added that the purpose of using mortar would be to prevent water from passing directly though the stone in order to back water up and through the structure; the intent of the weir.

Matt Urban said the coast guard qualified Ayers Pond as non-navigable for coast guard jurisdiction.

Gino Infascelli and Lori Sommer stated that it was necessary to add a monitoring plan for the fish weir to the wetland application.

Mike Hicks asked if cultural had been checked. Sarah stated that it had not been check yet but it would be prior to the wetland application being submitted.

Matt Urban asked if the impacts due to the fish weir were self-mitigating and further mitigation would not be required. Lori Sommer agreed.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Barrington, #41660 Mitigation Report

At the October 18, 2017 Natural Resource Agency meeting mitigation was discussed. It was agreed that constructing the downstream fish weir would serve as mitigation for the proposed maintenance/ rehabilitation work and that the impacts needed to construct the weir were self-mitigating and no further mitigation would not be required.

A monitoring plan for the fish weir is included with the application.

Barrington, #41660 Fish Weir Monitoring Plan

In order to establish if the fish weir serves its purpose of backwatering water through the rehabilitated pipe, the condition of the weir and water depths upstream of the weir and through the pipe will be collected for three years.

Monitoring Protocol:

Monitor during "low flow" stream conditions (July 1 through October 1) and for 3 years post construction.

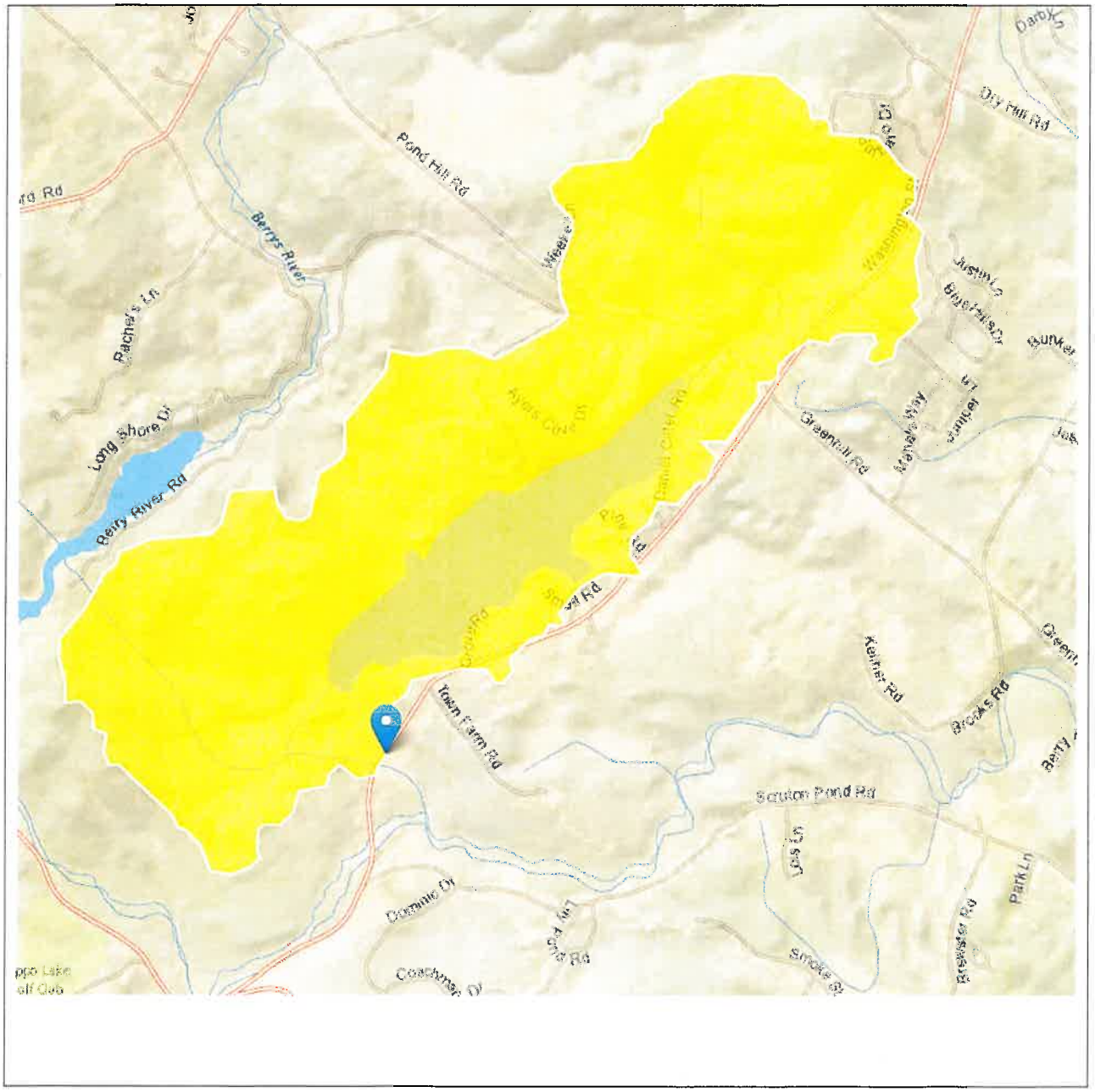
1. Check the condition of the weir to ensure it is structurally intact and in good condition.
    a. Weir is still in place
    b. Weir is not missing any rocks that make up the structural integrity
    c. Initial monitoring year measure the distance from the outlet invert to the weir
2. Measure the water depth within the stream channel upstream of the fish weir but before the outlet of the structure
3. Measure the water depth within the structure
4. Observations of water flow
5. Observations of aquatic life present

Hydraulic Data

Drainage Area – 3.16 square miles

Flow – Q 100 = 296 cfs

The proposed structure will pass the 100 year flood.



Watershed Boundaries Map

NH Department of Transportation
Bureau of Bridge Maintenance
Project, # 41660
Env-Wt 904.09 Alternative Design
TECHNICAL REPORT

Env-Wt 904.09(a) - If the applicant believes that installing the structure specified in the applicable rule is not practicable, the applicant may propose an alternative design in accordance with this section.

Please explain why the structure specified in the applicable rule is not practicable (Env-Wt 101.69 defines practicable as *available and capable of being done after taking into consideration costs, existing technology, and logistics in light of overall project purposes.)*

The unnamed stream that flow from the outlet of Ayers Pond has a drainage area of 3.16 square miles which qualifies this stream as a Tier 3 crossing. The required span based on the NH Stream Crossing Guidelines for a new crossing is 28'-0 based on the regional hydraulic curve calculation. A structure of this size would cost approximately $650,000. Spending this much money on a structure that could be adequately preserved for approximately $120,000 would not be a practicable use of resources.

The proposed alternative meets the specific design criteria for Tier 2 and Tier 3 crossings to the *maximum extent practicable*, as specified below.

Env-Wt 904.05 Design Criteria for Tier 2 and Tier 3 Stream Crossings – New Tier 2 stream crossings, replacement Tier 2 crossings that do not meet the requirements of Env-Wt 904.07, and new and replacement Tier 3 crossings shall be designed and constructed:

(a) In accordance with the NH Stream Crossing Guidelines.

The proposed improvements have been developed in accordance with the NH Stream Crossing Guidelines. The Department has considered numerous design alternatives based on general considerations that take the geomorphic conditions of the stream into account as it relates to the structure. The Department has collected data in the field and in the office to aid in the design of the proposed crossing. Using information that was available the Department has determined that a full bridge replacement would not be practicable. As such, the Department has proposed an alternative design that meets the intent of the stream crossing guidelines to maximum extent practicable.

(b) With bed forms and streambed characteristics necessary to cause water depths and velocities within the crossing structure at a variety of flows to be comparable to those found in the natural channel upstream and downstream of the stream crossing.

The proposed project will not significantly change the existing waterway opening and structure alignment, and therefore, it will not change the depths or velocities at the crossing. The existing structure is a closed bottom metal pipe arch. The repaired structure will remain a closed bottom structure but will now be concrete. The proposed alternative, although not an upgrade, does not diminish existing conditions at the crossing.

(c) To provide a vegetated bank on both sides of the watercourse to allow for wildlife passage.

The exisiting structure does not have banks through the pipe, nor will it after the repair. The banks abutting both sides of the crossing are currently vegetated. Although there are temporary impacts to the downstream banks the vegetation and existing conditions are not expected to be changed permanently. The upstream banks are vegetated and have stone walls along both banks.Wildlife can still pass through the crossing, however it will be in a wet/ aquatic environment.

(d) To preserve the natural alignment and gradient of the stream channel, so as to accommodate natural flow regimes and the functioning of the natural floodplain.

The proposed project will not significantly change the existing waterway opening nor the structure alignment, therefore the current alignment and gradient of the stream channel will not change as a result of this project.

(e) To accommodate the 100-year frequency flood, to ensure that (1) there is no increase in flood stages on abutting properties; and (2) flow and sediment transport characteristics will not be affected in a manner which could adversely affect channel stability.

Flow data taken from the New Hampshire Streamstats was input into Federal Highway Authority HY-8. Flood Insurance Studies were also used as reference for the proposed project and showed no flood zone for the project area. Analysis was done on the existing structure and the proposed structure with the concrete invert and it was determined that the structure will still adequately accommodate the 100-year flood. Abutting property owners will not see an increase in flooding since the structure will not compromise (restrict nor open up) the channel's flow rate, which means the channel will should remain stable. The proposed design will continue to accommodate sediment transport through the crossing.

(f) To simulate a natural stream channel.

The existing culvert has a metal invert. The culvert will have a concrete invert after the work is completed. Simulating a natural stream channel is not feasible with this type of maintenance activity.

(g) So as not to alter sediment transport competence.

The proposed project will not impact the crossing's ability to transport sediment. Flow rates and transport competency will remain the same as existing.

Env-Wt 904.09(c)(3) – The alternative design must meet the general design criteria specified in Env-Wt 904.01:

Env-Wt 904.01
(a) Not be a barrier to sediment transport;

There will be no barriers to sediment transport as a result of the structure modification/ repair. The crossing currently transports sediment and the proposed repairs will not alter the crossing's ability to

continue this function. The crossing will maintain the existing opening and therefore is anticipated to continue to pass everything it is currently passing

(b) Prevent the restriction of high flows and maintain existing low flows;

The proposed crossing will maintain the existing waterway capacity. High flows and low flows will not be changed as a result of this project.

(c) Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction;

Aquatic life indigenous to the water body will not be obstructed or otherwise disrupted as a result of this project. The degree to which organisms use the crossing for passage will remain the same through addition of the downstream fish weir. The stream will also maintain its ability to successfully maintain adequate fish passage. During low flows small mammal species such as raccoons are expected to be able to utilize the crossing as a means of crossing the road.

(d) Not cause an increase in the frequency of flooding or overtopping of banks;

The proposed project will not increase the frequency of flooding or overtopping banks. The project will maintain the existing waterway opening. This crossing will accommodate 100 yr. flood events without an increase in water levels upstream.

(e) Preserve watercourse connectivity where it currently exists;

The watercourse is currently connected. Water flows through the pipe at low flow conditions.

(f) Restore watercourse connectivity where: (1) Connectivity previously was disrupted as a result of human activity(ies); and (2) Restoration of connectivity will benefit aquatic life upstream or downstream of the crossing, or both;

The watercourse is currently connected. The invert lining is expected to raise the elevation of the watercourse through the pipe to an elevation that would perch the culvert at the outlet during low flow periods. To address the perch a downstream fish weir will be installed to backwater during low flows to maintain watercourse connectivity during low flow periods.

(g) Not cause erosion, aggradation, or scouring upstream or downstream of the crossing; and

The intent of the proposed project will not cause erosion, aggradation or scouring upstream or downstream of the crossing. Appropriate BMP's will be in place to ensure that the construction site is stable at all times. Riprap will be placed at the outlet within the channel and banks for erosion protection and stabilization in order to maintain the structural integrity of the bridge during all flow conditions.

(h) Not cause water quality degradation.

The proposed project will not cause water quality degradation. The project will utilize appropriate BMP's throughout construction to ensure that the construction site is stable at all times.

*****Note: An alternative design for Tier 1 stream crossings must meet the general design criteria (Env-Wt 904.01) only to the *maximum extent practicable*.**

CONFIDENTIAL – NH Dept. of Environmental Services review

Memo

NH Natural Heritage Bureau
NHB Datacheck Results Letter

To: Douglas Locker, New Hampshire Department of Transportation
7 Hazen Drive
Concord, NH 03302

From: Amy Lamb, NH Natural Heritage Bureau
Date: 10/12/2018 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB18-3161 Town: Barrington Location: US 202 over Outlet for Ayers Pond
Description: This project is to provide bridge rehabilitation of the bridge carrying US 202 over the outlet of Ayers Pond. This project will include installing a concrete invert and placing riprap.

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: Please provide a plan showing proposed impact areas and photos of the habitat adjacent to the bridge.

Plant species	State[1]	Federal	Notes
climbing hempvine (*Mikania scandens*)	E	--	Threats include changes to the hydrology (e.g., water levels) of its habitat and increased sedimentation or nutrients and pollutants in stormwater runoff.

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

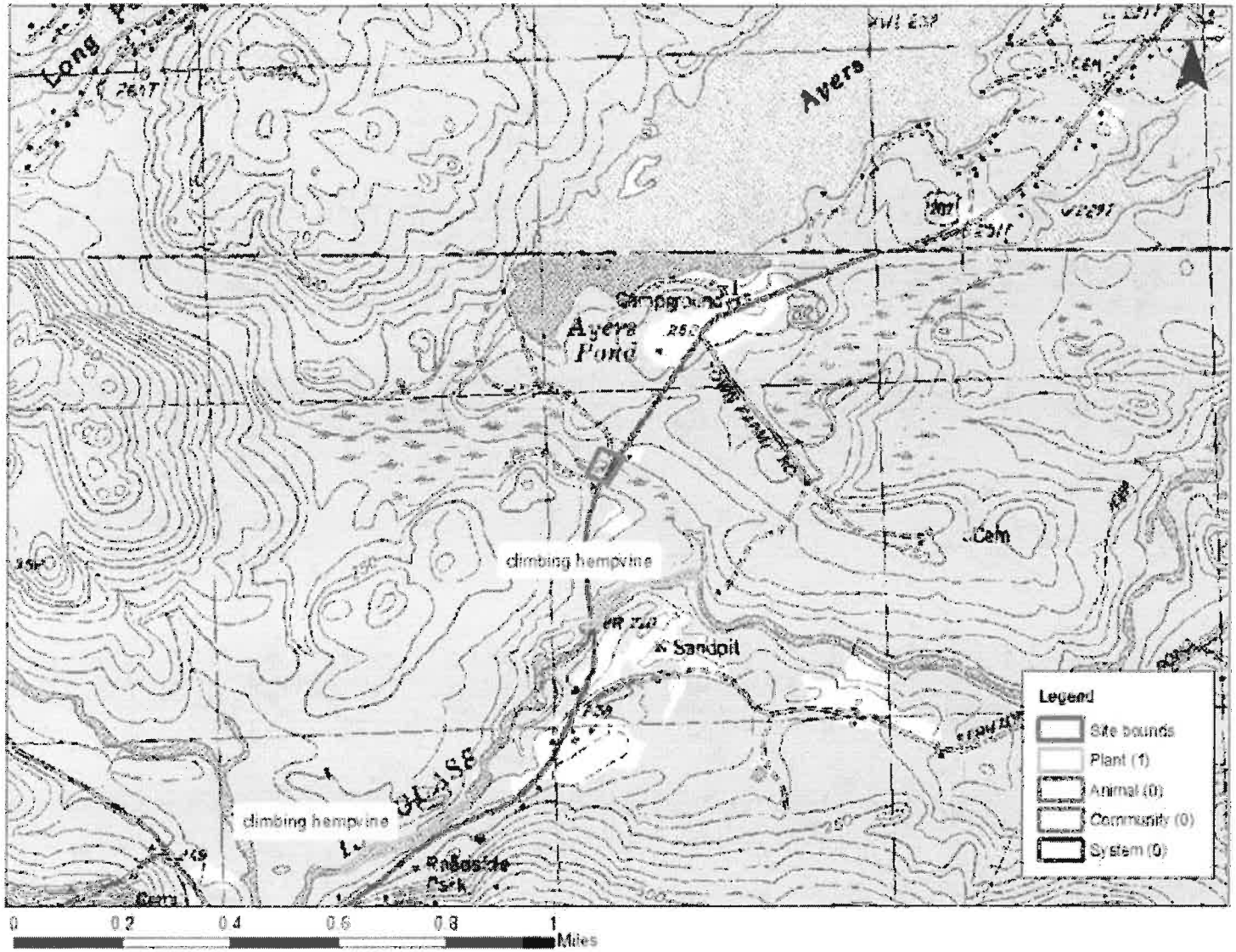
A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

CONFIDENTIAL – NH Dept. of Environmental Services review

NHB18-3161



New Hampshire Natural Heritage Bureau - Plant Record

climbing hempvine (*Mikania scandens*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Excellent quality, condition and landscape context ('A' on a scale of A-D).
Comments on Rank: Large population.

Detailed Description: 2016: Area 3: Approximately 6x7x8 meter triangular patch, dense mat on top of other vegetation. Approximately 40% cover within patch. Area 4: 2x2 meter patch with 25% cover. Area 5: 3x1 meter patch with sparse cover (10%).
2011, 2010, 2008: Area 1: Hundreds of plants forming an impenetrable thicket. Area 2: A couple dozen colonies.
1988: Specimen collected.

General Area: 2016: Associated plants include silky dogwood (*Swida amomum*), three-way sedge (*Dulichium arundinaceum*), Joe-Pye weed (*Eutrochium* sp.), bedstraw (*Galium* sp.), American bur-reed (*Sparganium americanum*), lowland yellow-loosestrife (*Lysimachia hybrida*), swamp yellow-loosestrife (*Lysimachia terrestris*), smartweed (*Persicaria* sp.), wild grape (*Vitis* sp.), horsetail (*Equisetum* sp.), pickerelweed (*Pontederia cordata*), and straw-colored umbrella sedge (*Cyperus strigosus*).
2011, 2010, 2008: Area 1: Quiet stretch of river, growing on silky dogwood (*Swida amomum*). Area 2: Very bouldery with rapids. Growing on little islands and shore communities created by collections of boulders, with silky dogwood as the scaffolding.
1988: Climbing on emergent marsh vegetation at edge of river: pickerelweed (*Pontederia cordata*), horsetail (*Equisetum* sp.), and grasses.

General Comments:
Management Comments:

Location

Survey Site Name: Isinglass River, Rte 202 Site
Managed By:

County: Strafford
Town(s): Barrington
Size: 4.5 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2011, 2010, 2008: Along and in the Isinglass River above the stone works before it crosses under Rte 202 bridge and more so after the the dam along the north, less steep side of the Isinglass River
Area 1: Sporadically immediately after bridge and then abundantly for hundreds of feet until the turn in the river to the SE (e.g. 43.241232N, 71.051233W).
Area 2: Above (west of) the bridge from 43.233532N, 71.063987W to 43.235241N, 71.059358W, sporadically on both sides of the river among boulders either on the shore or in the river.
1988: Isinglass River, downstream from where Rte. 202 crosses the river.

Dates documented

First reported: 1988-09-19 Last reported: 2016-08-17

Memo

NH NATURAL HERITAGE BUREAU
NHB DATACHECK RESULTS LETTER

To: Douglas Locker, New Hampshire Department of Transportation
7 Hazen Drive
Concord, NH 03302

From: Amy Lamb, NH Natural Heritage Bureau
Date: 10/9/2017 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB17-3082 Town: Barrington Location: Route 202 over Outlet Ayers Pond
Description: Install concrete invert within existing metal plate pipe arch.
cc: Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: Please send photos of the crossing, if available, and a description/work plan detailing access, any vegetation removal, and how/when the work will be completed. Please send to me and to Kim Tuttle.

Plant species	State[1]	Federal	Notes
climbing hempvine (*Mikania scandens*)	E	--	Threats include changes to the hydrology (e.g., water levels) of its habitat and increased sedimentation or nutrients and pollutants in stormwater runoff.

Vertebrate species	State[1]	Federal	Notes
Banded Sunfish (*Enneacanthus obesus*)	SC	--	Contact the NH Fish & Game Dept (see below).
Blanding's Turtle (*Emydoidea blandingii*)	E	--	Contact the NH Fish & Game Dept (see below).
Bridle Shiner (*Notropis bifrenatus*)	T	--	Contact the NH Fish & Game Dept (see below).
Spotted Turtle (*Clemmys guttata*)	T	--	Contact the NH Fish & Game Dept (see below).
Wood Turtle (*Glyptemys insculpta*)	SC	--	Contact the NH Fish & Game Dept (see below).

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

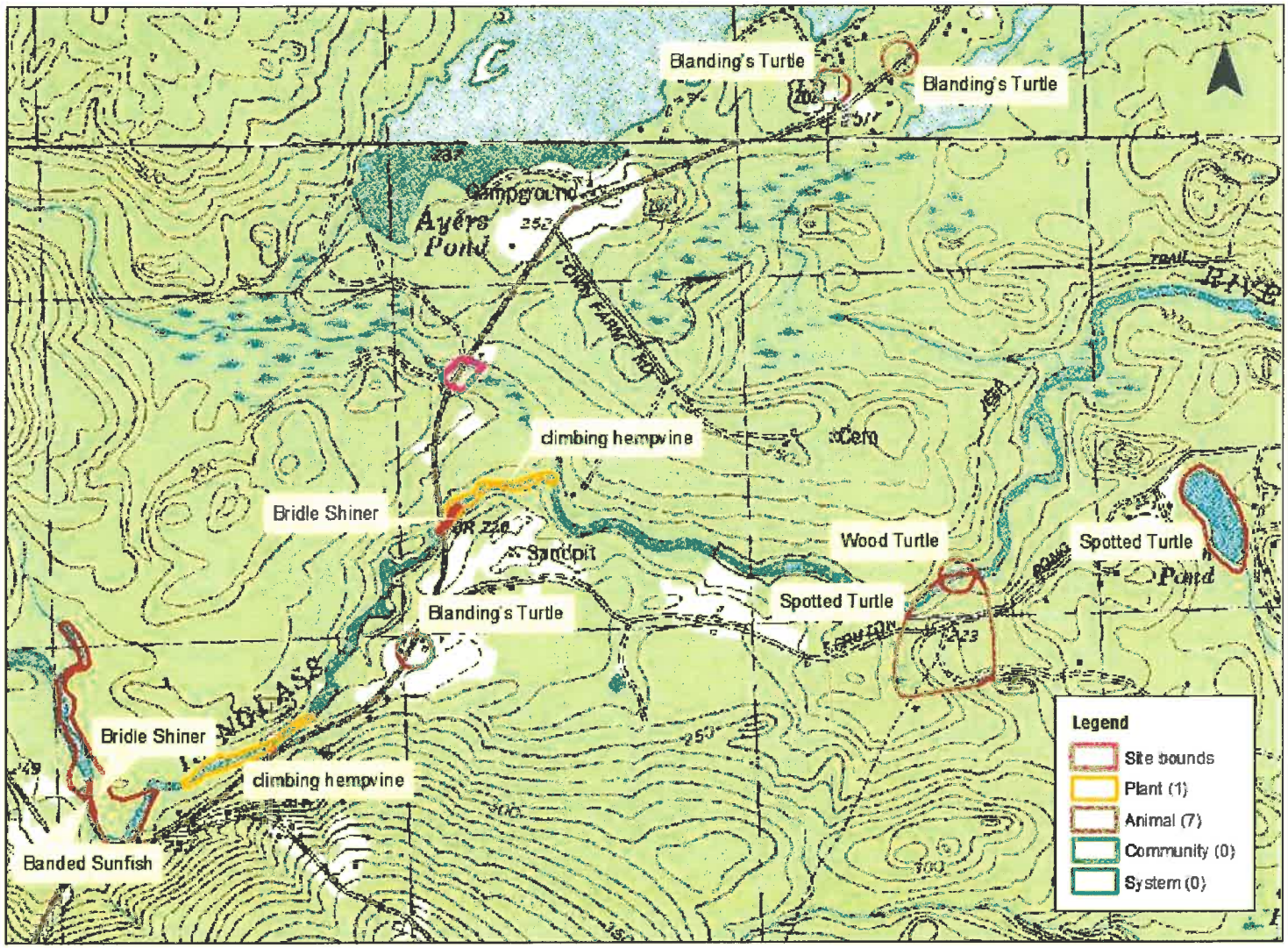
Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

NHB17-3082


Blanding's Turtle
Blanding's Turtle
Campground
Ayers Pond
climbing hempvine
Bridle Shiner
Wood Turtle
Spotted Turtle
Spotted Turtle
Blanding's Turtle
Bridle Shiner
climbing hempvine
Banded Sunfish
Legend
Site bounds
Plant (1)
Animal (7)
Community (0)
System (0)
0 0.1 0.2 0.3 0.4 0.5
Miles

New Hampshire Natural Heritage Bureau - Plant Record

climbing hempvine (*Mikania scandens*)

Legal Status

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Excellent quality, condition and landscape context ('A' on a scale of A-D).
Comments on Rank: Large population.

Detailed Description: 2016: Area 3: Approximately 6x7x8 meter triangular patch, dense mat on top of other vegetation. Approximately 40% cover within patch. Area 4: 2x2 meter patch with 25% cover. Area 5: 3x1 meter patch with sparse cover (10%).
2011, 2010, 2008: Area 1: Hundreds of plants forming an impenetrable thicket. Area 2: A couple dozen colonies.
1988: Specimen collected.

General Area: 2016: Associated plants include silky dogwood (*Swida amomum*), three-way sedge (*Dulichium arundinaceum*), Joe-Pye weed (*Eutrochium* sp.), bedstraw (*Galium* sp.), American bur-reed (*Sparganium americanum*), lowland yellow-loosestrife (*Lysimachia hybrida*), swamp yellow-loosestrife (*Lysimachia terrestris*), smartweed (*Persicaria* sp.), wild grape (*Vitis* sp.), horsetail (*Equisetum* sp.), pickerelweed (*Pontederia cordata*), and straw-colored umbrella sedge (*Cyperus strigosus*).
2011, 2010, 2008: Area 1: Quiet stretch of river, growing on silky dogwood (*Swida amomum*). Area 2: Very bouldery with rapids. Growing on little islands and shore communities created by collections of boulders, with silky dogwood as the scaffolding.
1988: Climbing on emergent marsh vegetation at edge of river: pickerelweed (*Pontederia cordata*), horsetail (*Equisetum* sp.), and grasses.

General Comments:
Management Comments:

Location

Survey Site Name: Isinglass River, Rte 202 Site
Managed By:

County: Strafford
Town(s): Barrington
Size: 4.5 acres
Elevation: 210 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2011, 2010, 2008: Along and in the Isinglass River above the stone works before it crosses under Rte 202 bridge and more so after the the dam along the north, less steep side of the Isinglass River
Area 1: Sporadically immediately after bridge and then abundantly for hundreds of feet until the turn in the river to the SE (e.g. 43.241232N, 71.051233W).
Area 2: Above (west of) the bridge from 43.233532N, 71.063987W to 43.235241N, 71.059358W, sporadically on both sides of the river among boulders either on the shore or in the river.
1988: Isinglass River, downstream from where Rte. 202 crosses the river.

Dates documented

First reported: 1988-09-19
Last reported: 2016-08-17

New Hampshire Natural Heritage Bureau - Animal Record

Banded Sunfish (*Enneacanthus obesus*)

Legal Status

Federal: Not listed
State: Special Concern

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Rare or uncommon

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2005: Area 2725: 2 observed. Area 2718: 6 observed.
General Area: 2005: Areas 2725 and 2718: Freshwater - stream or river.
General Comments:
Management Comments:

Location

Survey Site Name: Isinglass River
Managed By:

County: Strafford
Town(s): Strafford
Size: .1 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2005: Area 2725: From Center Strafford, take Rte 126 SW 2.3 miles to the crossing with the east branch of the Isinglass River. Area 2718: Isinglass River, ca. 0.1 miles north of the junction of Strafford Rd. and Washington St.

Dates documented

First reported: 2005-07-10 Last reported: 2005-10-12

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2010: Area 12745M: 1 adult found dead on road on 05/06. 1 adult found dead on road on 07/02.
General Area: 2010: Area 12745M: Shrub wetland. Crossing road from coniferous forest toward a shrub wetlands/marsh to the west. In back of conifers apparently is a huge marsh/scrub shrub swamp complex
General Comments:
Management Comments:

Location

Survey Site Name: Round Pond
Managed By:

County: Strafford
Town(s): Barrington
Size: 1.9 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2010: Area 12745M: Route 202 Barrington Reptile Kill Zone. Rte 202 Barrington by house number 686

Dates documented

First reported:	2010-05-06	Last reported:	2010-07-02

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Apparently secure but with cause for concern
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2010: Area 13166: 1 adult female observed.
General Area: 2010: Area 13166: Roadside.
General Comments:
Management Comments:

Location

Survey Site Name: Round Pond
Managed By:

County: Strafford
Town(s): Barrington
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2010: Area 13166: Shoulder of Rte. 202/9, Barrington.

Dates documented

First reported: 2010-05-30 Last reported: 2010-05-30

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2015: Area 14030: 1 adult observed, sex unknown.
General Area: 2015: Area 14030: Roadside.
General Comments:
Management Comments:

Location

Survey Site Name: Round Pond
Managed By:

County: Strafford
Town(s): Barrington
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2015: Area 14030: Small Road, Barrington, between Route 202 and Ayers Pond.

Dates documented

First reported:	2015-06-09	Last reported:	2015-06-09

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Bridle Shiner (*Notropis bifrenatus*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Rare or uncommon
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2013: Small population ound in deep section of Isinglass River. No BS observed in lower section despite suitable habitat.
 2005: Area 8977: 1 observed, sex and age unknown. Area 9014: 1 observed, age and sex unknown.
 1985: Area 866: 1 immature observed, sex unknown. Area 865: 10 observed, age and sex unknown.

General Area: 2013: Deep section of Isinglass River. Floating heart and pondweed along banks. Slow flowing reach with natural gradient break.
 2005: Area 8977: Freshwater stream or river. Area 9014: Freshwater stream or river.
 1985: Area 866: Freshwater stream or river. Area 865: Freshwater steam or river.

General Comments: 2013: Bridle shiner present in very small area of suitable habitat, but not abundant or widespread. Unoccupied patches of aquatic vegetation downstream may be due to subtle increase in flow. Bridle shiner may be vulnerable in Isinglass River due to limited extent of habitat.
 1985: Area 866: One bridle shiner (35mm) sampled by electrofishing at NHFG Fishing for the Future index site ST285027. Index site is 300 feet long. Area 865: Ten bridled shiners sampled by electrofishing at NHFG Fishing for the Future index site ST285026. Index site is 300 feet long.

Management Comments:

Location

Survey Site Name: Isinglass River
Managed By: Olson

County: Strafford
Town(s): Barrington
Size: 11.0 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2005: Area 8977: Isinglass River at Rte. 126 crossing. Area 9014: Mohawk River Rte 126 crossing.
1985: Area 866: Isinglass River at Rte. 126 bridge (first bridge in Barrington). Area 865: Isinglass River at Rte. 202A bridge.

Dates documented

First reported: 1985-08-27 Last reported: 2013-07-23

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank:

Detailed Description: 2015: Area 14110: 1 adult observed, sex unknown.
2003 and 2002: 3 in each area.
General Area: 2015: Area 14110: Forested wetland.
2003 and 2002: Area 1: Poor fen (1.56 ha). Dominant flora: Sphagnum spp., *Chamaedaphne calyculata* (leatherleaf), Vaccinium spp. Area 2: Mixed poor/medium fen. Mainly Sphagnum spp., *Chamaedaphne calyculata* (leatherleaf), Vaccinium spp., and *Spiraea alba* var. *latifolia* (eastern meadowsweet). Forested swamp. Mainly Sphagnum spp. and *Acer rubrum* (red maple).
General Comments:
Management Comments:

Location

Survey Site Name: Scruton Pond
Managed By: NRCS_WRP_ScrutonPond

County: Strafford
Town(s): Barrington
Size: 34.9 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2003: Area 1: On Scruton Pond Road, 2.43 km from the intersection with Rte. 125. Area 2: On Scruton Pond Rd., 4.34 km from the intersection with Rte. 125.

Dates documented

First reported:	2002-05-22	Last reported:	2015-04-27

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Wood Turtle (*Glyptemys insculpta*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Rare or uncommon
State:	Special Concern	State:	Rare or uncommon

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank:

Detailed Description: 2002: Obs_id 2002.0201: One individual observed, 9-10" long.
General Area: 2002: Banks of this section of river are mostly undisturbed, shrubby, mostly silky dogwood, except for a mown lawn in one place. Areas of floodplain forest just downstream, to south is a vegetated gravel bank with pool, to north is an ephemeral tributary stream and its floodplain.
General Comments:
Management Comments:

Location

Survey Site Name: Isinglass River
Managed By:

County: Strafford
Town(s): Barrington
Size: 1.9 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2002: Obs_id 2002.0201: From the intersection of Rte. 9 and Rte. 125 in Barrington, go north on Rte. 125 for 1.5 miles. Turn left onto Scruton Pond Rd. Go 2.6 miles. On the left (south) is an acidic fen with a small area of open water at the road. On the right (north) is open woods. Park here and walk north to the river. Walk downstream about 0.1 mile to an area with old bridge abutments on the banks and a small informal rock dam. Turtle was in pool just below this impoundment.

Dates documented

First reported: 2002-07-14 Last reported: 2002-07-14

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

Locker, Douglas

From: Tuttle, Kim
Sent: Monday, July 30, 2018 1:36 PM
To: Locker, Douglas
Cc: Magee, John
Subject: RE: Barrington Bridge Maintenance Project NHB17-3082

Follow Up Flag: Follow up
Flag Status: Flagged

Doug,

The NHFG Nongame and Endangered Wildlife Program has reviewed NHB17-3082 for the proposed installation of a concrete invert within an existing metal plate pipe arch at the Rt. 202 over the outlet of Ayers Pond in Barrington. The NHB database check identified the following species in the vicinity of the project:
Banded Sunfish (*Enneacanthus obesus*) SC –
Blanding's Turtle (*Emydoidea blandingii*) E --
Bridle Shiner (*Notropis bifrenatus*) T --
Spotted Turtle (*Clemmys guttata*) T –
Wood Turtle (*Glyptemys insculpta*) SC –
1Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern

As long as the inlet and outlet of the plate pipe arch is not perched at the completion of the project creating a barrier to aquatic species passage, we do not expect impacts to any of the above named species. Please consult with John Magee, NHFG Fisheries Habitat Biologist, if grade control or weir structures need to be constructed to bring water levels up so that perched conditions will not exist at project completion.

Avoid the use of welded plastic or 'biodegradable plastic' netting or thread in erosion control matting on this job, if needed. There are numerous documented cases of wildlife including turtles and the state threatened northern black racer being trapped and killed in erosion control matting with synthetic netting and thread. The use of erosion control berm, Filtrexx or equal filter sock, or several 'wildlife friendly' options such as woven organic material (e.g., coco or jute matting) are commercially available. If you need examples of wildlife friendly matting, let me know.

Regards,

Kim Tuttle
Wildlife Biologist
NH Fish and Game
11 Hazen Drive
Concord, NH 03301
603-271-6544

Thanks,

Kim Tuttle
Wildlife Biologist
NH Fish and Game

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To:
Consultation Code: 05E1NE00-2018-SLI-2262
Event Code: 05E1NE00-2018-E-05285
Project Name: Barrington 073/127

July 02, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-2262

Event Code: 05E1NE00-2018-E-05285

Project Name: Barrington 073/127

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: Place invert within an existing metal arch pipe carrying US 202 over Outlet Ayers Pond.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/43.244197483846676N71.05401166955352W

Counties: Strafford, NH

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Flowering Plants

NAME	STATUS
Small Whorled Pogonia *Isotria medeoloides* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1890	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

IPaC Official Species List Consultation Code: **05E1NE00-2018-SLI-2262**

Information to Determine 4(d) Rule Compliance:	**YES**	**NO**
1. Does the project occur wholly outside of the WNS Zone[1]?	☐	☒
2. Have you contacted the appropriate agency[2] to determine if your project is near known hibernacula or maternity roost trees?	☒	☐
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	☐	☒
4. Could the project alter the entrance or interior environment of a known hibernaculum?	☐	☒
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	☐	☒
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	☐	☒

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency and Applicant[3] (Name, Email, Phone No.): Sarah Large (Bureau of Environment); Sarah.Large@dot.nh.gov ; 603-271-6916 & Doug Locker (Bridge Maintenance) Doug.Locker@dot.nh.gov

Project Name: Barrington, #41660

Project Location (include coordinates if known): 43.24425° / -71.053639°

Basic Project Description (provide narrative below or attach additional information):
The proposed work is to rehabilitate the 10'x6' metal plate pipe arch carrying US 202 over an unnamed stream that flows from the outlet of Ayers Pond. The proposed rehabilitation includes installing a concrete invert lining within the existing structure & cut off walls, place riprap at the outlet and inlet channel and banks, and install a downstream fish weir. No trees greater than 3" diameter at breast height will be removed.

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[1] http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf
[2] See http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html
[3] If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	☐	☒
Does the project occur within 150 feet of a known maternity roost tree?	☐	☒
Does the project include forest conversion[4]? (if yes, report acreage below)	☐	☒
Estimated total acres of forest conversion		
If known, estimated acres[5] of forest conversion from April 1 to October 31		
If known, estimated acres of forest conversion from June 1 to July 31[6]		
Does the project include timber harvest? (if yes, report acreage below)	☐	☒
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	☐	☒
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	☐	☒
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: Sarah Lange Date Submitted: 10/18/18

Sent to USFWS & ACOE

[4] Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).

[5] If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.

[6] If the activity includes tree clearing in June and July, also include those acreage in April to October.

Locker, Douglas

From: Lamb, Amy
Sent: Thursday, September 13, 2018 12:47 PM
To: Locker, Douglas
Subject: RE: Barrington Project 41660

Hi Doug,

Photographs of the outlet show previously-disturbed roadway slopes as well as dense understory vegetation (both herbs and shrubs), both of which are unlikely to support small whorled pogonia. Similarly, the inlet photos show a previously-disturbed roadway slope, shrubby understory vegetation, and dry upland soils that would be unlikely to support this species. If these photos are representative of any areas to be disturbed during the project, then is unlikely that small whorled pogonia occurs within the project area.

Thank you,
Amy

Amy Lamb
Ecological Information Specialist
(603) 271-2834
amy.lamb@dncr.nh.gov

NH Natural Heritage Bureau
DNCR - Forests & Lands
172 Pembroke Rd
Concord, NH 03301

From: Locker, Douglas
Sent: Tuesday, September 11, 2018 2:03 PM
To: Lamb, Amy
Subject: Barrington Project 41660

Hello Amy,

I am reaching out to you today in order to find out if there are concerns for the Small Whorled Pagonia in the area for a bridge carrying US 202 over Outlet Ayers Pond. I have attached the NHB report as well as the location map and some photos. The concern has arisen since the IPAC returned with a hit on that species. If you could indicate whether or not this location and area is suitable for this species that would be great.

Thanks,
Doug Locker
Design Engineer
NHDOT, Bureau of Bridge Maintenance
603-271-3667
Douglas.Locker@dot.nh.gov

US Army Corps of Engineers
New England District

U.S. Army Corps of Engineers
New Hampshire Programmatic General Permit (PGP)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to "work" include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See PGP, GC 5 regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*	X	
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X	
2.2 Are there proposed impacts to SAS, shellfish beds, special wetlands and vernal pools (see PGP, GC 26 and Appendix A)? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) website, www.nhnaturalheritage.org, specifically the book Natural Community Systems of New Hampshire.		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	X	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		X
2.5 The overall project site is more than 40 acres.		X
2.6 What is the size of the existing impervious surface area?	3245 sq. ft.	
2.7 What is the size of the proposed impervious surface area?	3245 sq. ft.	
2.8 What is the % of the impervious area (new and existing) to the overall project site?	29.5%	
3. Wildlife	Yes	No
3.1 Has the NHB determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require a NHB determination.)	X	
3.2 Would work occur in any area identified as either "Highest Ranked Habitat in N.H." or "Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green, respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological Condition.") Map information can be found at: • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.		X
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the PGP, GC 21?	X	

4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?		X
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		X
5. Historic/Archaeological Resources		
If a minor or major impact project, has a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) been sent to the NH Division of Historical Resources as required on Page 5 of the PGP?**	X	

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.
** If project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.

NHDOT Cultural Resources Review

For the purpose of compliance with regulations of the National Historic Preservation Act, the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), the US Army Corps of Engineers' *Appendix C*, and/or state regulation RSA 227-C:9, *Directive for Cooperation in the Protection of Historic Resources*, the NHDOT Cultural Resources Program has reviewed the proposed project for potential impacts to historic properties.

PROJECT PROPOSAL: US Route 202 over Outlet Ayers Pond; Rehabilitation of existing corrugated metal plate pipe arch (10'8" X 6' 11") by installing a 6" concrete invert lining. Those impacts will be completely within the existing footprint/infrastructure; excavation is not necessary. They also plan to install a downstream fish weir within the stream channel. There are historic stone retaining walls (possible historic foundation) downstream of the culvert (photos on V drive). They should not need to impact these structures.

Above Ground Review

Known/approximate age of structure:
1978 corrugated metal plate pipe arch, less than 50 years old

☒ No Potential to Cause Effect/No Concerns

☐ Concerns:

Below Ground Review

Recorded Archaeological site: ☐Yes ☐No

Nearest Recorded Archaeological Site Name & Number: 27-ST-0016 Ayer's Pond Site
☒Pre-Contact ☐Post-Contact

Distance from Project Area:
1966 ft (599 meters) northwest of project area

☒ No Potential to Cause Effect/No Concerns

A desktop review was conducted for the proposed project area and it was determined there are no known archaeological sites within the project area.

There are however Historic Period stone retaining walls visible on both sides of the upstream channel in the surrounding area. Cartographic review based on 19th century maps indicated the presence of structures in the vicinity of a historic road and the outlet of Ayers Pond. The 1892 Hurd map depicts a structure east of the historic road, while the 1856 Chace Map depicts a saw mill (S.M.) in the vicinity. The nearest occupants on both maps are members of the Cater family. Further historic and archaeological investigations would be required if the stone walls on both sides of the upstream channel are impacted. Preservation is recommended.

Although this is a non-federal project, the proposed activities for installing a concrete invert lining within the 1978 metal pipe arch would meet the criteria of the Section 106 Programmatic Agreement, Appendix B: Projects with Minimal Potential to Cause Effects under:
2. Non-historic bridge and culvert maintenance, renovation, or total replacement, that may require minor additional right-of-way or easement, and which is not within the boundaries of a historic property or district, including: a. replacement of maintenance of drainage pipes and culverts made of steel, plastic and concrete

As long as the work is limited to the disturbed footprint of the metal plate pipe arch and does not extend to the stone retaining walls on both sides of the upstream channel, we have no concerns.

☐ Concerns:

Reviewed by:

Sheila Charles

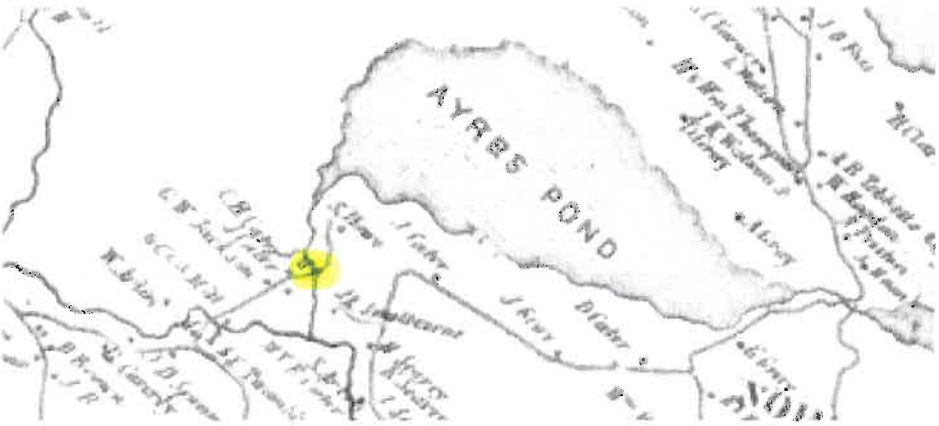
10/23/2017

NHDOT Cultural Resources Staff

Date:

1892 Hurd Map showing the crossing of the historic road alignment (US Route 202) over Ayers Pond Outlet.

1856 Chace Map showing a saw mill (SM) near the crossing of the historic road alignment (US Route 202)over Ayers Pond Outlet.



Inlet

Upstream Channel

Outlet

Downstream Channel / NE Bank

Downstream Channel

Looking Upstream through the Culvert

CONSTRUCTION SEQUENCE

1. Install temporary sandbag cofferdam in the brook, prepare sediment basin and divert flow through a bypass pipe or pumping through a bypass.
2. The work zone will be dewatered or contained.
3. Place concrete invert through the structure and cut off walls at the inlet and outlet.
4. Construct fish weir and place rirap.
5. Remove cofferdams and restore the site.

Note: The Project will utilize BMP's from the Best Management Practices manual during all phases of construction.

Env-Wt 404 Criteria for Shoreline Protection

The preservation of the bridge that carries Rte. US 202 over Outlet Ayers Pond proposes the placement of stone fill within areas under the jurisdiction of the NH Wetlands Bureau and the US Army Corps of Engineers. The stone fill will be located in the channel and along the bank of the proposed structure as shown on the plans.

Pursuant to PART Wt 404 Criteria for Shoreline Stabilization, the following addresses each codified section of the Administrative Rules:

Wt 404.01 Least Intrusive Method

The riverbank stabilization treatment proposed is the least intrusive construction method necessary to minimize the disruption to the existing shorelines. The stone treatment can be reasonably constructed utilizing general highway construction methods.

Wt 404.02 Diversion of Water

Proposed roadway drainage will allow storm water run-off to be diverted so that it will flow over vegetated areas, insofar as possible, prior to entering the unnamed stream that flows from the outlet of Ayer Pond. This will minimize erosion of the shoreline.

Wt 404.03 Vegetative Stabilization

Natural vegetation will be left undisturbed to the maximum extent possible. The only locations being disturbed are the impacted areas on the plan for construction. All newly developed slopes and disturbed areas will have humus and seed applied for turf establishment, which will help stabilize the project area.

Wt 404.04 Rip-Rap

(a) Stone fill, as proposed, is shown on the attached plans to protect the channel and bank as necessary. Stable embankments are necessary to maintain the structural integrity of the bridge during all flow conditions.

(b) (1-5) The minimum and maximum stone size, the gradation, cross sections of the stone fill, proposed location, and other details have been provided on the attached plans. Bedding for the stone fill will consist of natural ground excavated to the proposed underside of the stone fill.

(b) (6) Enclosed are plan sheets to sufficiently indicate the relationship of the project to fixed points of reference, abutting properties, and features of the natural shoreline.

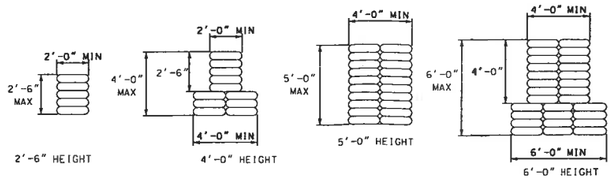
(b) (7) Stone fill is recommended for the limits shown on the attached plans to protect the banks from erosion during flood flows, from scour during all flows, and slopes greater than 2:1 have difficulty supporting vegetation.

(c) This project is not located adjacent to a great pond or water body where the state holds fee simple ownership.

(d) Stone fill is proposed to extend down to and adequately keyed into the channel bottom to prevent possible undermining of the slope.

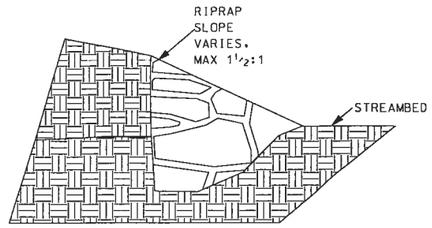
(e) The enclosed plan has been stamped by a professional engineer.

RIPRAP GRADATION
D15 < 11"
D50 < 14"
D100 < 24"
NOMINAL DIAMETER 12"



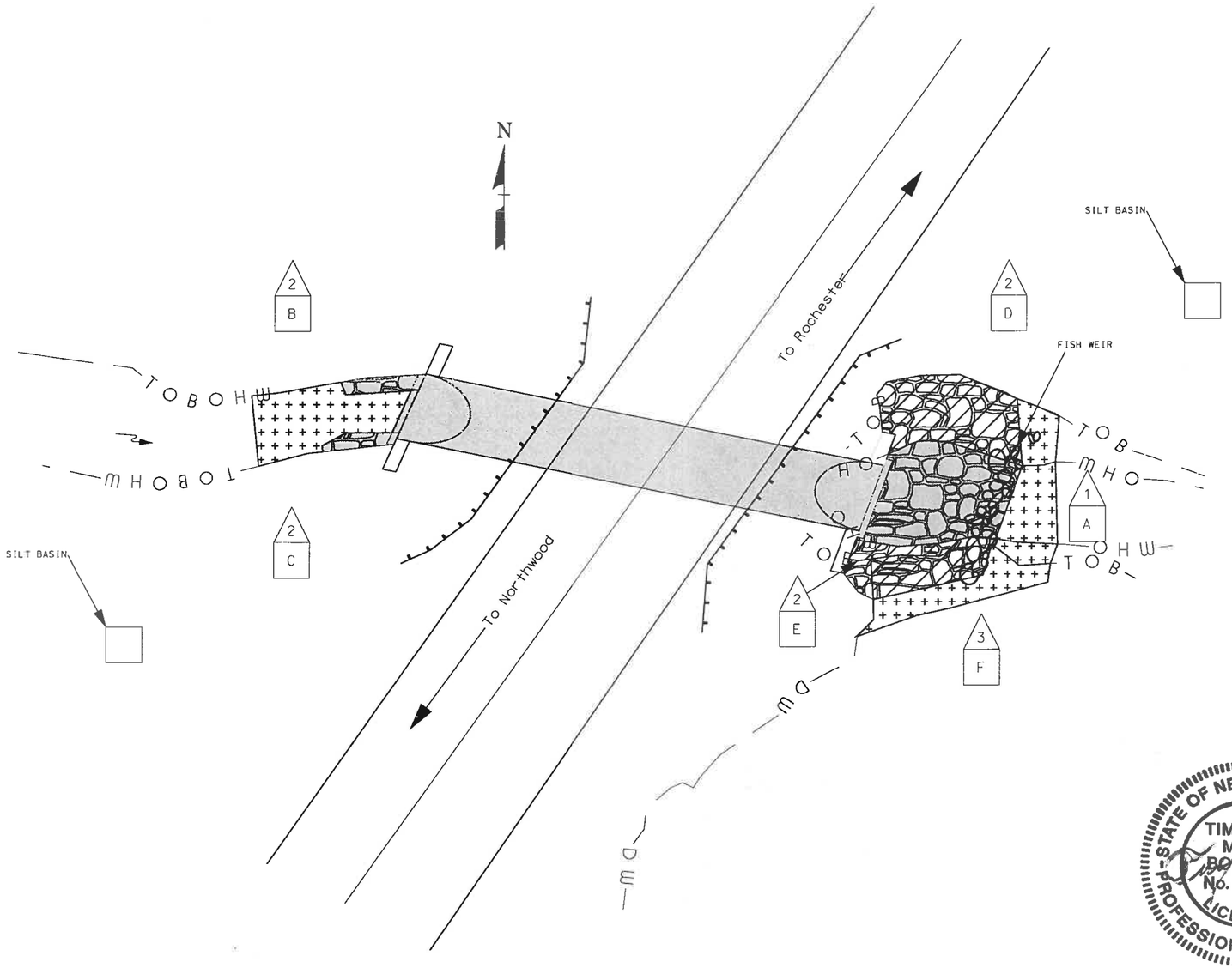
COFFERDAM DETAILS

NOT TO SCALE



SECTION A-A

NOT TO SCALE



WETLAND IMPACTS

SCALE: 1" = 20'-0"

RRIPRAP	
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	
TEMPORARY IMPACTS	

STATE OF NEW HAMPSHIRE - PROFESSIONAL ENGINEER - TIMOTHY MAU No. 12183 LICENSED

WETLANDS DELINEATED BY SARAH LARGE AND MATT URBAN SEPTEMBER 2017

10 0 10 20
SCALE IN FEET

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE

TOWN BARRINGTON BRIDGE NO. 073/127 STATE PROJECT 41660

LOCATION US 202 OVER OUTLET AYERS POND

WETLAND IMPACTS

BRIDGE SHEET 1 OF 4

REVISIONS AFTER PROPOSAL	BY	DATE

	BY	DATE		BY	DATE
DESIGNED	DBL	7/6/18	CHECKED		
DRAWN	DBL	7/6/18	CHECKED		
QUANTITIES			CHECKED		
ISSUE DATE			FISCAL YEAR 2019	CREW 6	SHEET NO. 1
REV. DATE					TOTAL SHEETS 4

SHEET SCALE AS NOTED

FILE NUMBER BARRINGTON 073/127

Barrington 073/127

WETLAND IMPACT SUMMARY												
WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA IMPACTS						LINEAR STREAM IMPACTS FOR MITIGATION		
			PERMANENT				TEMPORARY		PERMANENT		
			N.H.W.B. (NON WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)				BANK LEFT	BANK RIGHT	CHANNEL
			SF	LF	SF	LF	SF	LF	LF	LF	LF
1	R2UB12	A			1130	106	278	33			
2	BANK	B		13				14			
2	BANK	C		13				10			
2	BANK	D	218	22			51	5			
2	BANK	E	27	22			30	10			
3	PFO1E	F	91				118				
		G									
		H									
		I									
		J									
		K									
		L									
	TOTAL		336	70	1130	106	477	72	0	0	0

PERMANENT IMPACTS: 1466 SF
TEMPORARY IMPACTS: 477 SF
TOTAL IMPACTS: 1943 SF

SUBTOTALS		PERMANENT				TEMPORARY	
		N.H.W.B. (NON WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)			
CLASS	DESCRIPTION	SF	LF	SF	LF	SF	LF
R2UB12	RIVERINE	0	0	1130	106	278	33
BANK	BANK	245	70	0	0	81	39
PFO1E	PALUSTRINE FORESTED	91	0	0	0	118	0

WETLANDS DELINEATED BY SARAH LARGE AND MATT URBAN SEPTEMBER 2017

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE

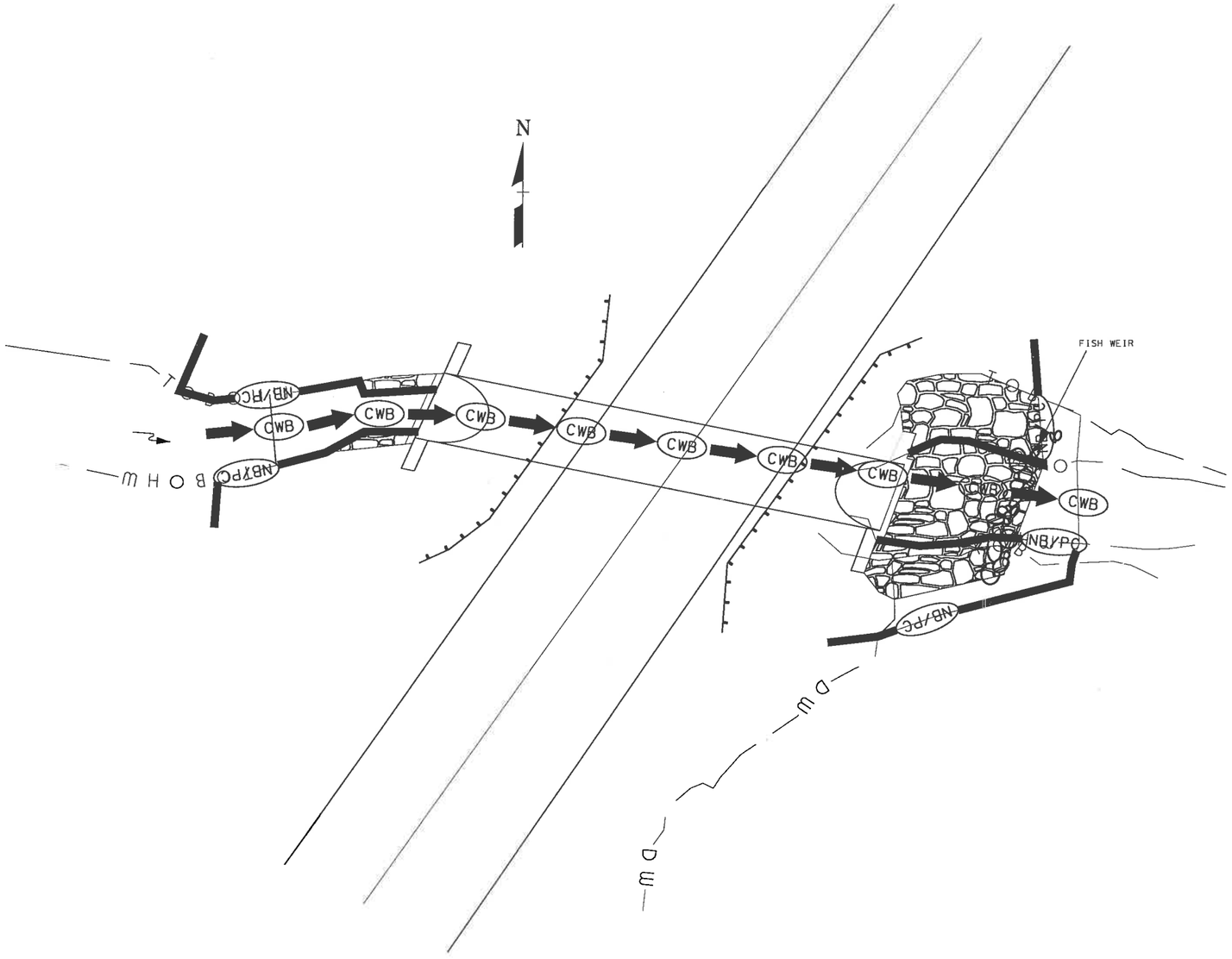
TOWN BARRINGTON BRIDGE NO. 073/127 STATE PROJECT 41660
LOCATION US 202 OVER OUTLET AYERS POND

WETLAND IMPACTS

BRIDGE SHEET 2 OF 4

REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE
		DESIGNED	DBL	7/6/18	CHECKED	
		DRAWN	DBL	7/6/18	CHECKED	
		QUANTITIES			CHECKED	
		ISSUE DATE		FISCAL YEAR 2019	CREW 6	SHEET NO. 2
		REV. DATE				

FILE NUMBER BARRINGTON 073/127
TOTAL SHEETS 4
SHEET SCALE AS NOTED



EROSION CONTROL PLAN LEGEND

PC — PERIMETER CONTROL

- SILT FENCE
- EROSION CONTROL MIX BERM
- EROSION CONTROL MIX SOX
- TURBIDITY CURTAIN
- SHEET PILE
- COFFER DAM

NB/PC — NATURAL BUFFER/PERIMETER CONTROL

- SILT FENCE
- EROSION CONTROL MIX BERM
- EROSION CONTROL MIX SOX
- TURBIDITY CURTAIN
- SHEET PILE
- COFFER DAM

CP CP — CHANNEL PROTECTION

CP CP

- STONE CHECK DAMS
- STRAW WATTLES
- CHANNEL MATTING
- CLASS D EROSION STONE
- CLASS C STONE

CWB CWB — CLEAN WATER BYPASS

CWB CWB

- PUMP THROUGH PIPE
- DRAIN THROUGH PIPE OR CHANNEL

WETLANDS DELINEATED BY SARAH LARGE AND MATT URBAN SEPTEMBER 2017

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE

TOWN BARRINGTON BRIDGE NO. 073/127 STATE PROJECT 41660
LOCATION US 202 OVER OUTLET AYERS POND

WETLAND IMPACTS

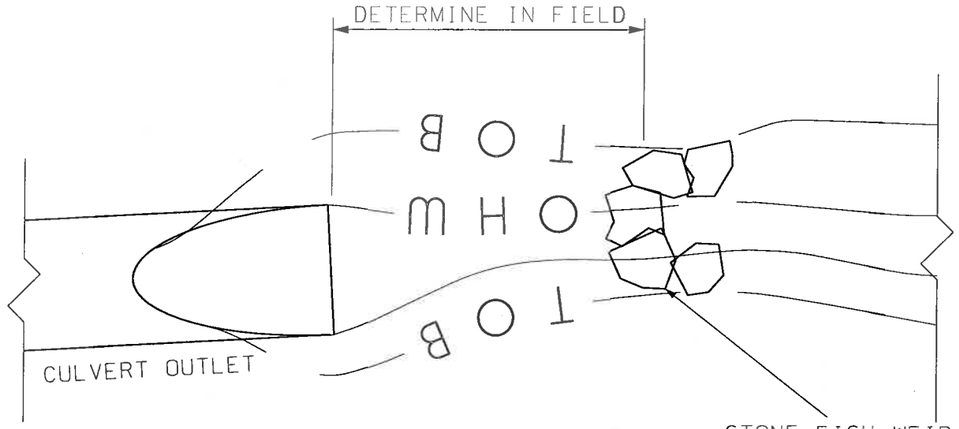
BRIDGE SHEET 3 OF 4

REVISIONS AFTER PROPOSAL	BY	DATE

	BY	DATE		BY	DATE
DESIGNED	DBL	7/6/18	CHECKED		
DRAWN	DBL	7/6/18	CHECKED		
QUANTITIES			CHECKED		

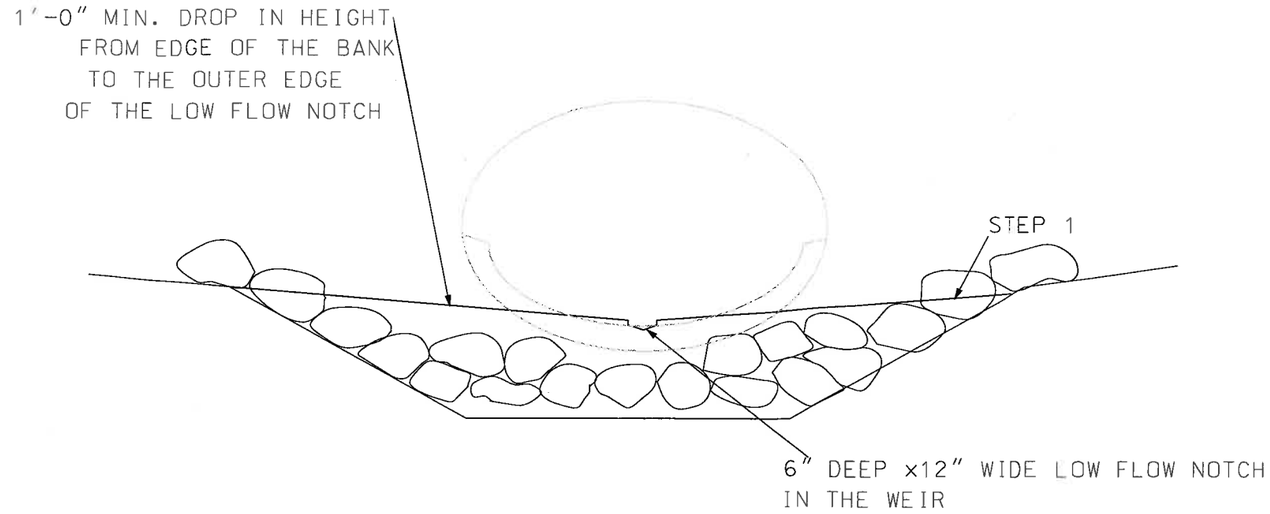
FILE NUMBER BARRINGTON 073/127

SHEET SCALE	ISSUE DATE	FISCAL YEAR	CREW	SHEET NO.	TOTAL SHEETS
	REV. DATE	2019	6	3	4



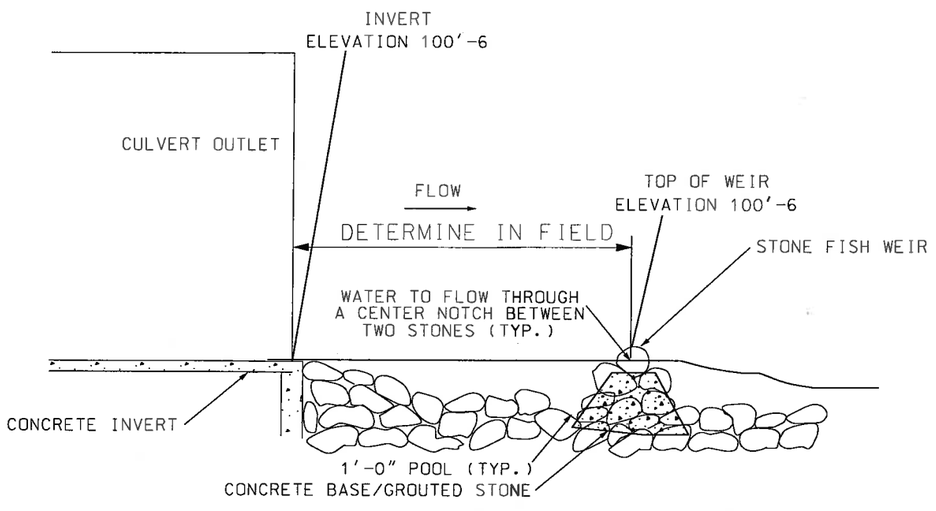
PLAN VIEW

NOT TO SCALE



WEIR CROSS SECTION B-B

NOT TO SCALE



WEIR CROSS SECTION A-A

NOT TO SCALE

NOTES:

1. LOW FLOW WATER LEVEL WILL BE EVEN WITH THE NEW INVERT WHEN THERE IS ENOUGH FLOW FOR 1/2" DEPTH IN THE PIPE
2. THE LOW FLOW NOTCH WILL BE CREATED BY PLACING TWO STONES SIDE BY SIDE, ALLOWING THE WATER TO FLOW BETWEEN THEM.
3. MAXIMUM DROP PER WEIR EQUALS 9" MAX. TO BE DETERMINED IN FIELD IN CONSULTATION WITH NH FISH AND GAME.

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE

TOWN BARRINGTON BRIDGE NO. 073/127 STATE PROJECT 41660

LOCATION US 202 OVER OUTLET AYERS POND

ROCK FISH WEIR SYSTEM

BRIDGE SHEET 4 OF 4

REVISIONS AFTER PROPOSAL	BY	DATE		BY	DATE
			DESIGNED		
			DRAWN	DBL	10/10/18
			QUANTITIES		
			ISSUE DATE		
			REV. DATE		

CHECKED
CHECKED
CHECKED

FILE NUMBER BENTON 063/179

SHEET SCALE	FISCAL YEAR	CREW	SHEET NO.	TOTAL SHEETS
AS NOTED	2019	6	4	4